

Notice of Allowability

Application No.

09/987,113

Examiner

Paul Gurzo

Applicant(s)

TANIGUCHI, JUNICHI

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 8/11/03.
2. ☒ The allowed claim(s) is/are 1-5 and 7-10.
3. ☒ The drawings filed on 13 November 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet.

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892) | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 4 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____. |
| 5 <input type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. _____. | 6 <input type="checkbox"/> Examiner's Amendment/Comment |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |

DETAILED ACTION***Allowable Subject Matter***

Claims 1-5 and 7-10 are allowed.

The following is an examiner's statement of reasons for allowance: As the claimed invention was read in light of the specification, the prior art of record fails to disclose or render obvious an ion trap mass spectrometer, comprising an ion supply source for supplying ions, an ion storing section disposed near the ion supply source and having an entrance side close to the ion supply source, an exit side opposite to the entrance side, and means for providing an RF electric field for holding the ions inside ion storing section and an axial electric potential inclined from the entrance side to the exit side of the ion storing section so that the ions are confined and gathered near the exit side in the ion storing section, an entrance gate electrode disposed between the ion supply source and the entrance side of the ion storing section, said entrance gate electrode being controlled to introduce and retain the ions in the ion storing section, an exit gate electrode disposed near the exit side of the ion storing section, said exit gate electrode being controlled to retain the ions in the storing section and emitting a bunch of ions, and an ion trap section disposed at a side opposite to the ion storing section relative to the exit gate electrode and comprising means for cutting off an RF voltage while the bunch of ions emitted from the ion storing section enters the ion trap section, and means for suddenly applying the RF voltage when a maximum amount of the ions stays inside the ion trap section, and control means connected to the entrance gate electrode, the exit gate electrode, the ion trap section, and the ion storing section for controlling the same, said control means controlling the entrance gate electrode and the exit gate electrode so that the entrance gate electrode is opened and the exit gate electrode is

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closed to introduce the ions into the ion storing section after a first predetermined period of time, the entrance gate electrode is closed while the exit gate electrode is closed to accumulate the ions at the exit side of the ion storing section after a second predetermined period of time, the exit gate electrode is opened to introduce the accumulated ions into the ion trap section at once.

The closest prior art, Douglas and Bier, teach an ion trap mass spectrometer with an ion supply source, ion storing section, entrance and exit gate electrodes, ion trap section, and control means. However, they do not teach that the control means operates to open and close the entrance and exit gate electrodes in the claimed manner, and they are silent to accumulating the ions at the exit side of the ion storing region so that they are introduced into the ion trap section at once.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Gurzo whose telephone number is (703) 306-0532. The examiner can normally be reached on M-Thurs. 7:30 - 6:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached on (703) 308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

PMG

August 28, 2003


JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2030